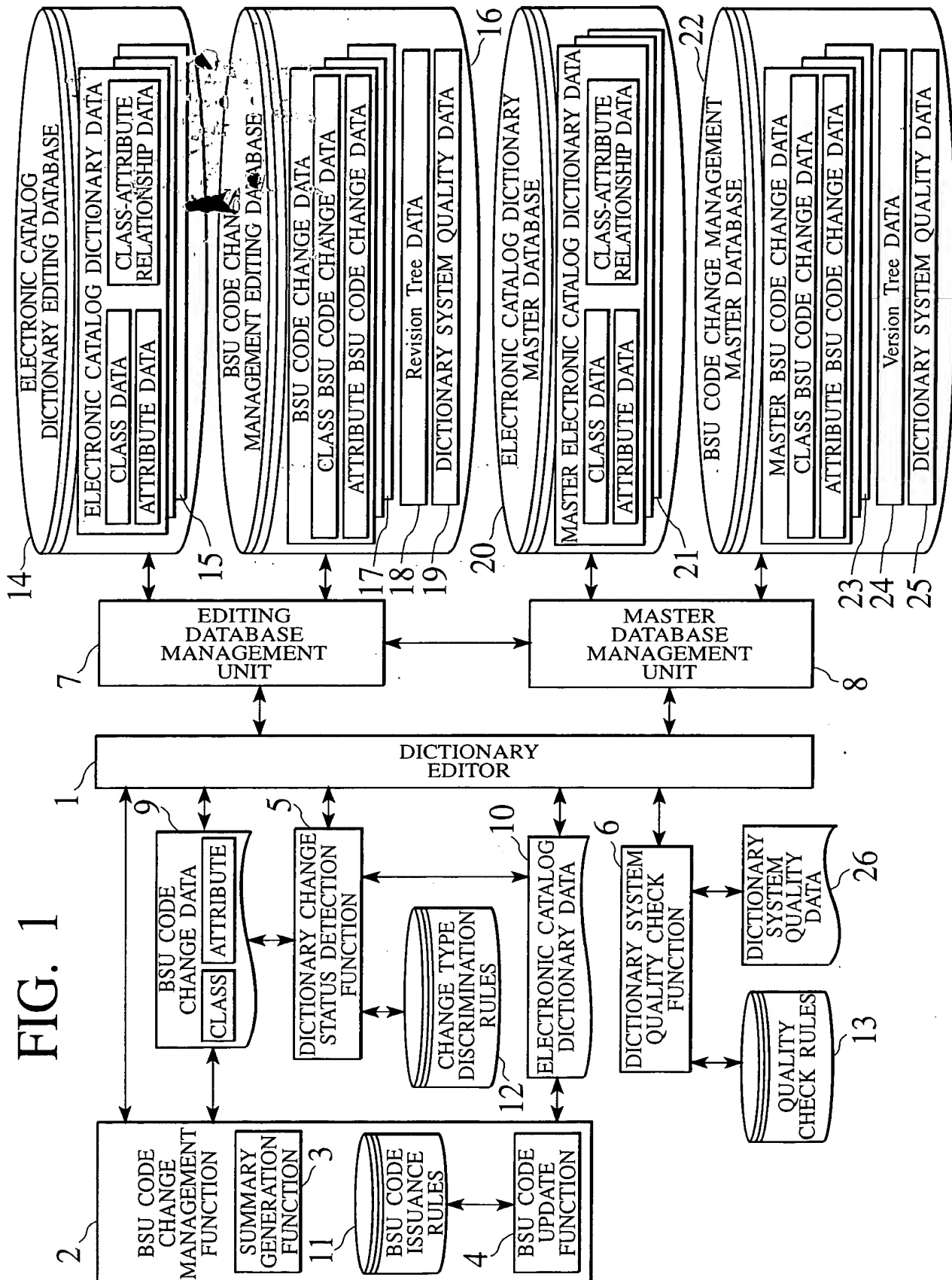


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FIG. 1



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FIG. 2

CLASS DATA

CID	Preferred_ Name	BSU	PARENT CLASS CID	DATA QUALITY LEVEL
A0	CLASS A0	A001				A
B0	CLASS B0	A002	A001			A
B1	CLASS B1	A003	A001			A
C0	CLASS C0	A004	A002			B
C1	CLASS C1	A005	A002			B
C2	CLASS C2	A006	A003			C
C3	CLASS C3	A007	A003			D

FIG. 3

ATTRIBUTE DATA

PID	Preferred_ Name	BSU	DATA QUALITY LEVEL
V0	ATTRIBUTE V0	P001				A
V1	ATTRIBUTE V1	P002				A
V2	ATTRIBUTE V2	P003				A
V3	ATTRIBUTE V3	P004				B
V4	ATTRIBUTE V4	P005				B
V5	ATTRIBUTE V5	P006				B
V6	ATTRIBUTE V6	P007				B

FIG. 4

CLASS-ATTRIBUTE RELATIONSHIP DATA

PID	CID scope	Visible	Applicable
V0	A0	A0, B0, B1, C0, C1, C2, C3	A0, B0, B1, C0, C1, C2, C3
V1	B0	B0, C0, C1	B0, C0, C1
V2	C0	C0	NULL
V3	C1	C1	C1
V4	B1	B1, C2, C3	C3
V5	C2	C2	NULL
V6	C3	C3	NULL

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FIG. 5

CLASS BSU CODE CHANGE DATA

Status	CID	BSU	Refer to	Same as
NEW	C4	NULL	NULL	C3
OOD	C3	A007	C4	NULL
RUP	C2	A006	NULL	NULL

※ VUP : Version UP
RUP : Revision UP
NEW : New BSU
OOD : Out of Dictionary

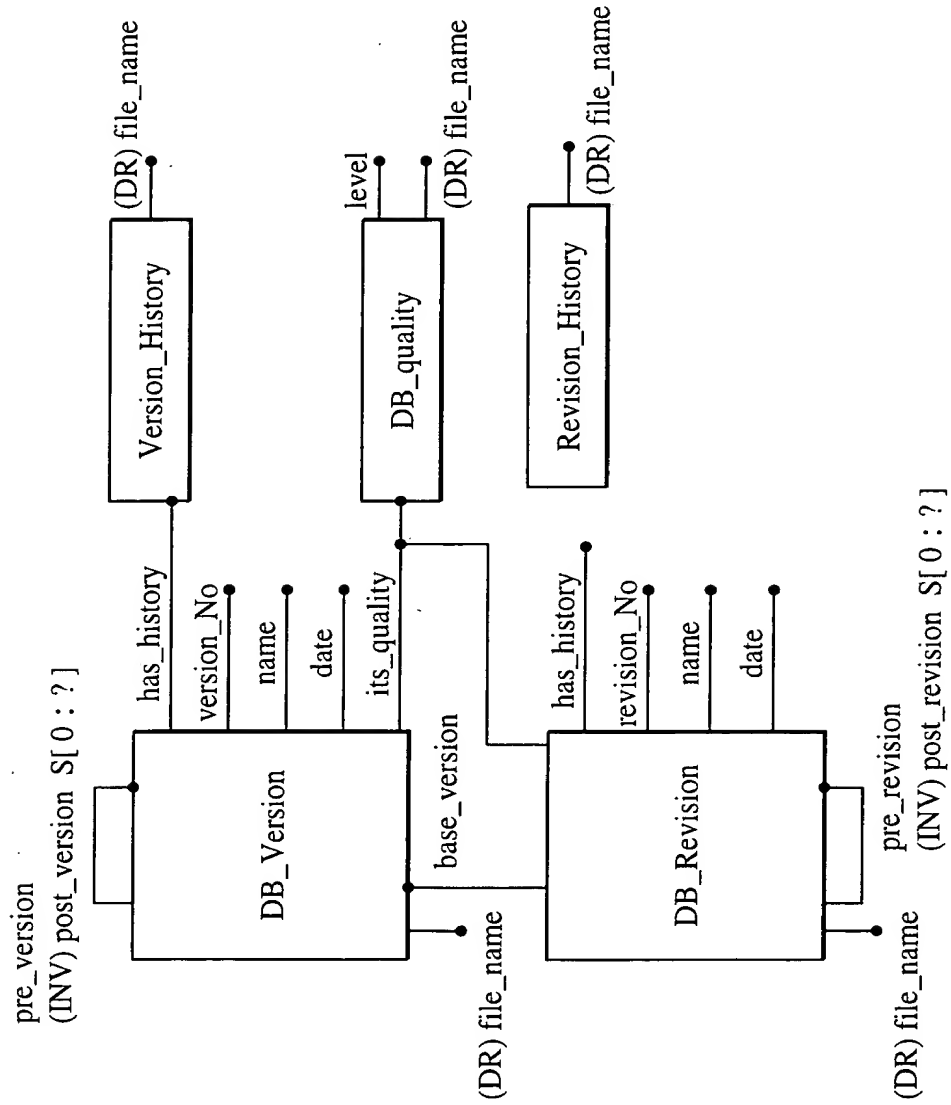
FIG. 6

ATTRIBUTE BSU CODE CHANGE DATA

Status	PID	BSU	Refer to	Same as
NEW	V7	NULL	NULL	V4
NEW	V8	NULL	NULL	V6
OOD	V6	P007	V8	NULL
RUP	V2	P003	NULL	NULL

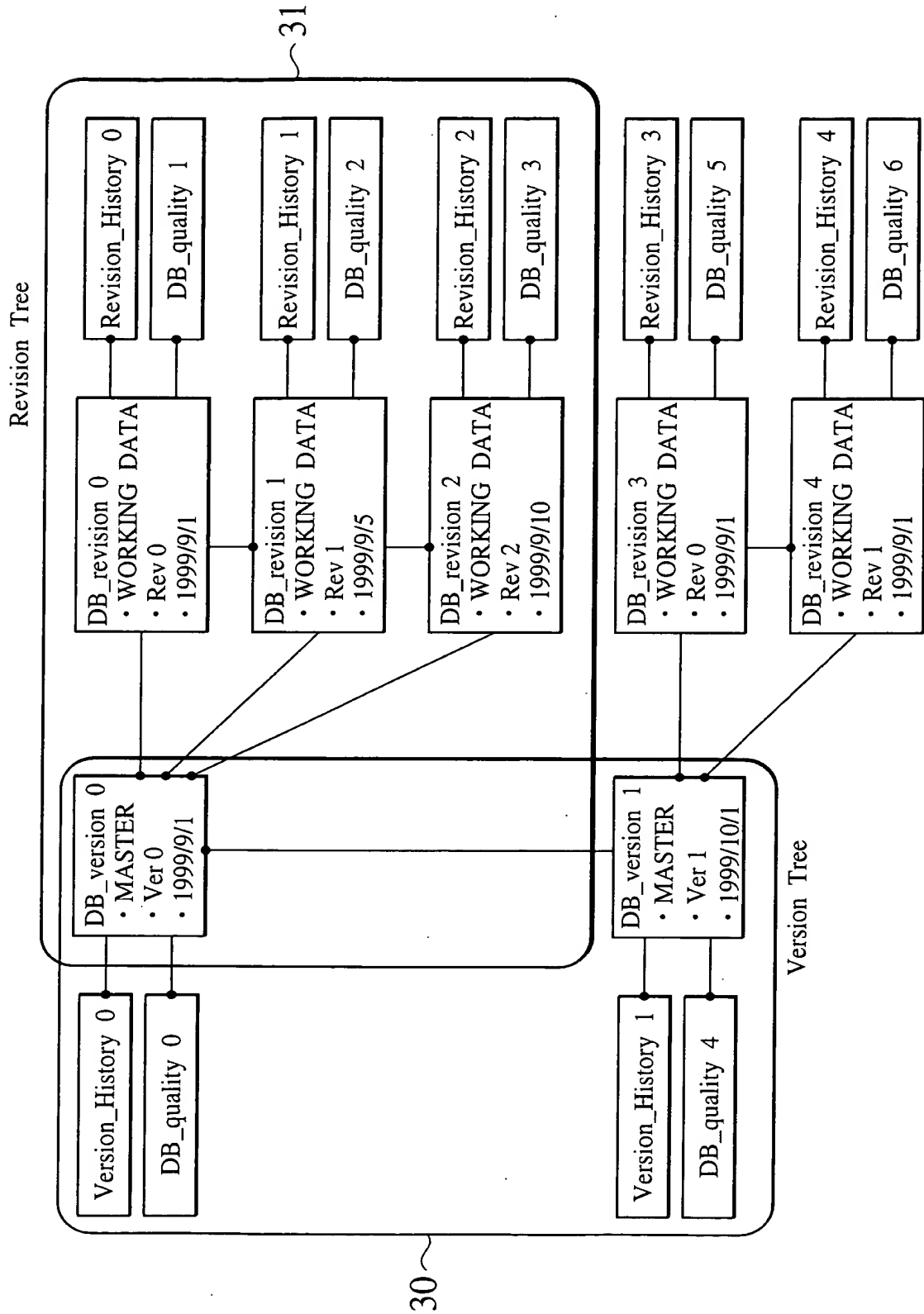
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FIG. 7



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FIG. 8



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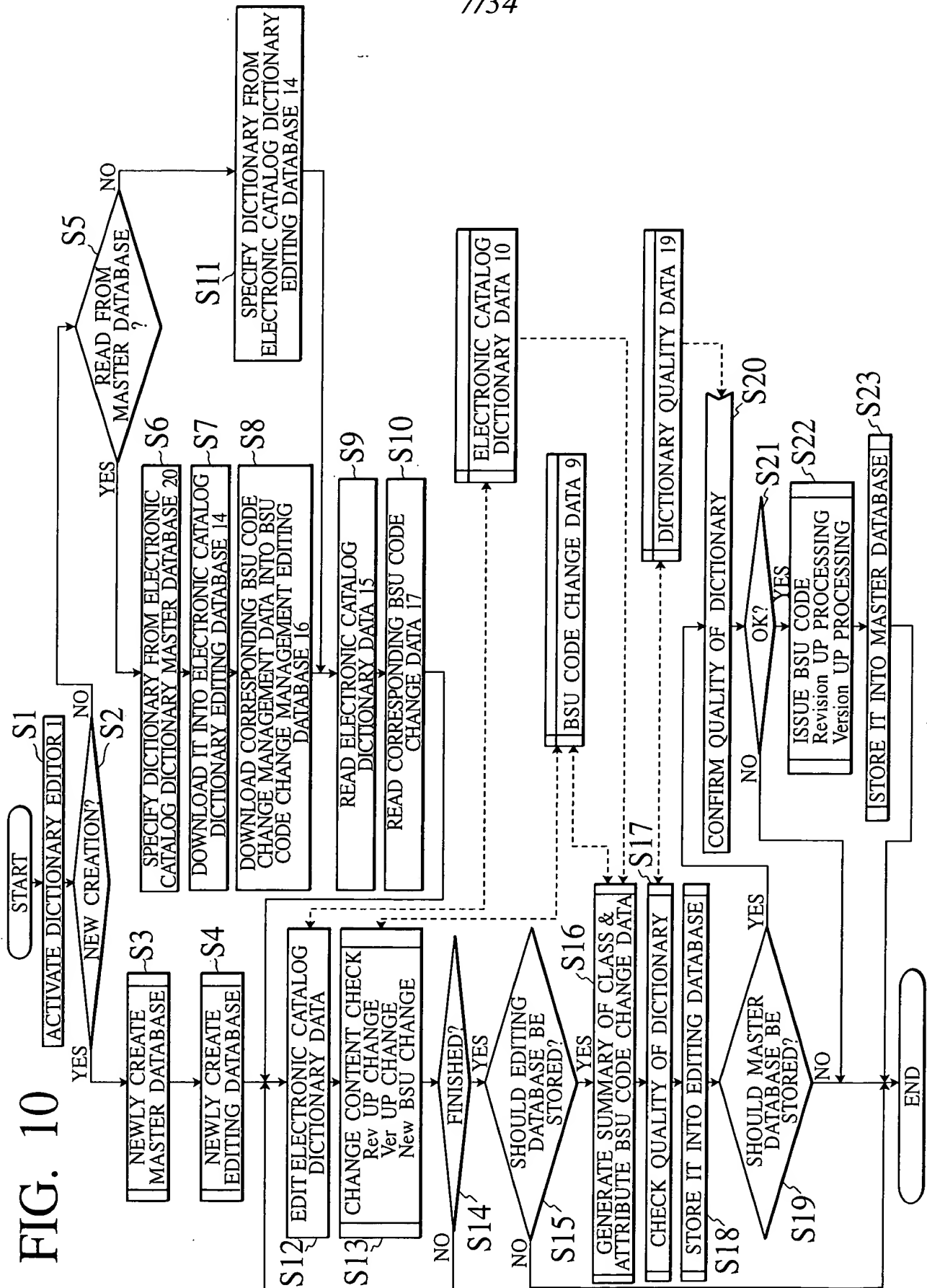
FIG. 9

DICTIONARY SYSTEM QUALITY DATA

ID	CONTENT
C1	THERE IS ONE SUB-CLASS
V7	CONTENT IS SAME AS V3
V8	CONTENT IS SAME AS V4
V9	CONTENT IS SAME AS V5
CLASS SYSTEM	B

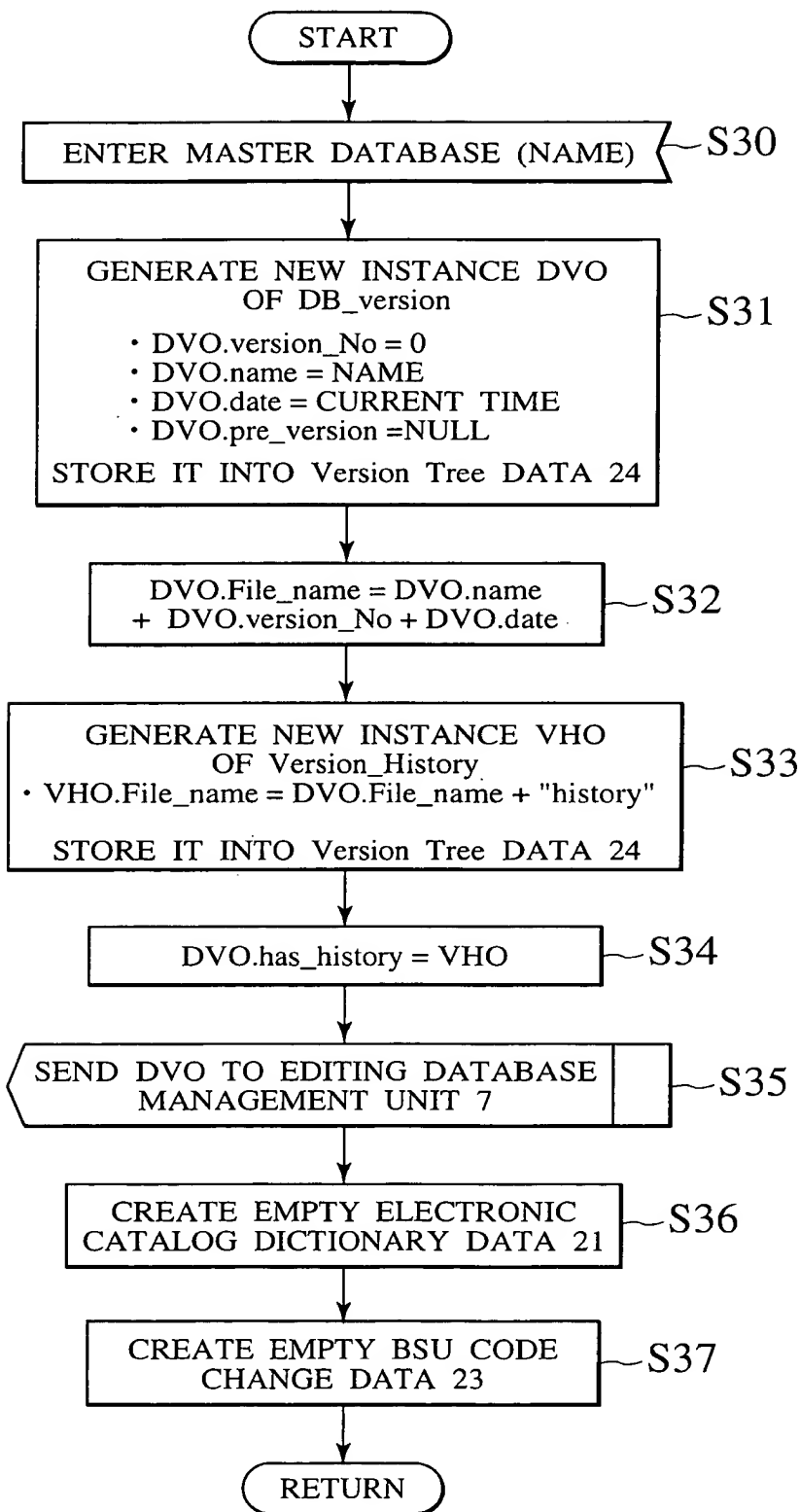
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FIG. 10



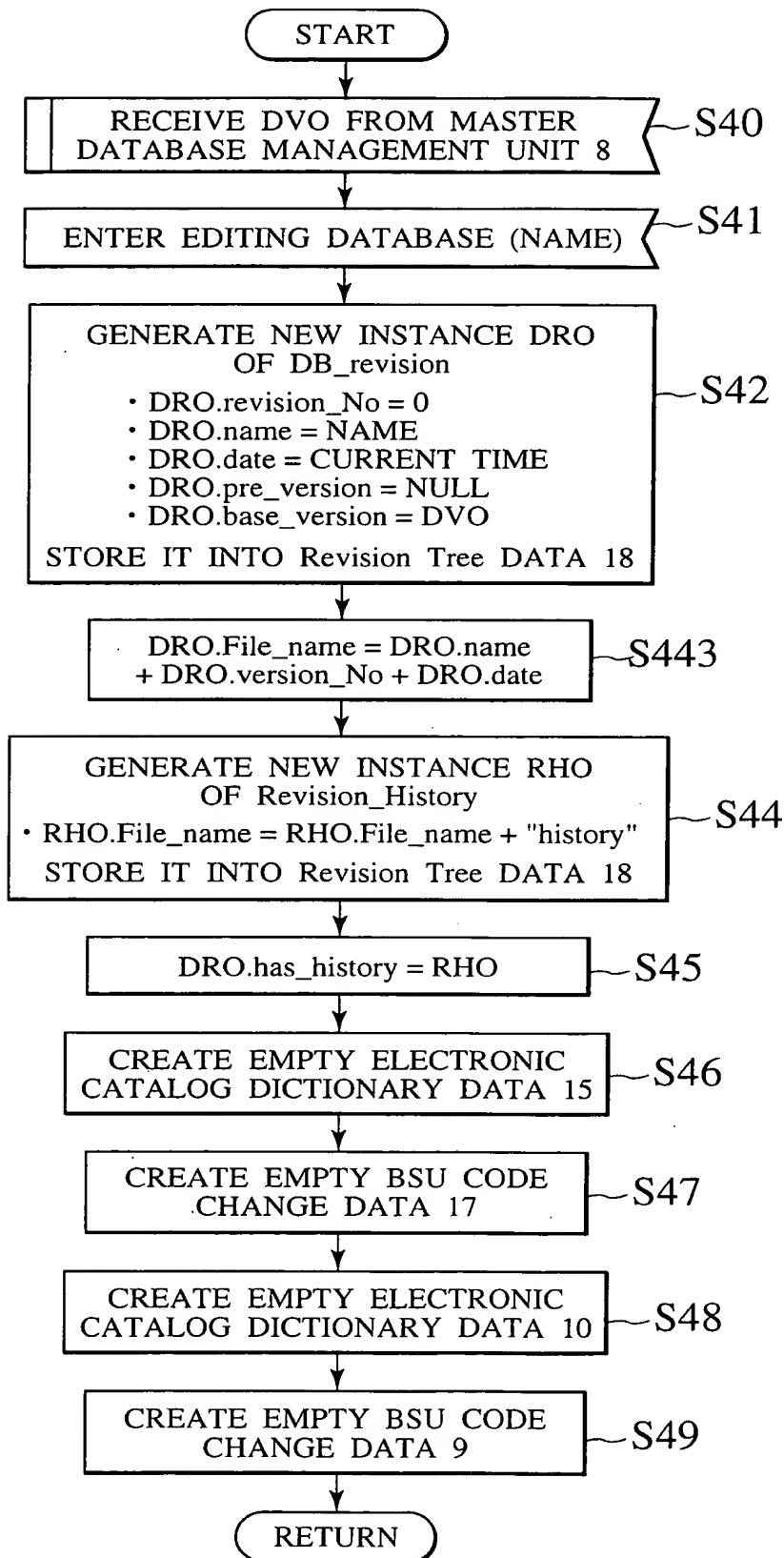
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FIG. 11



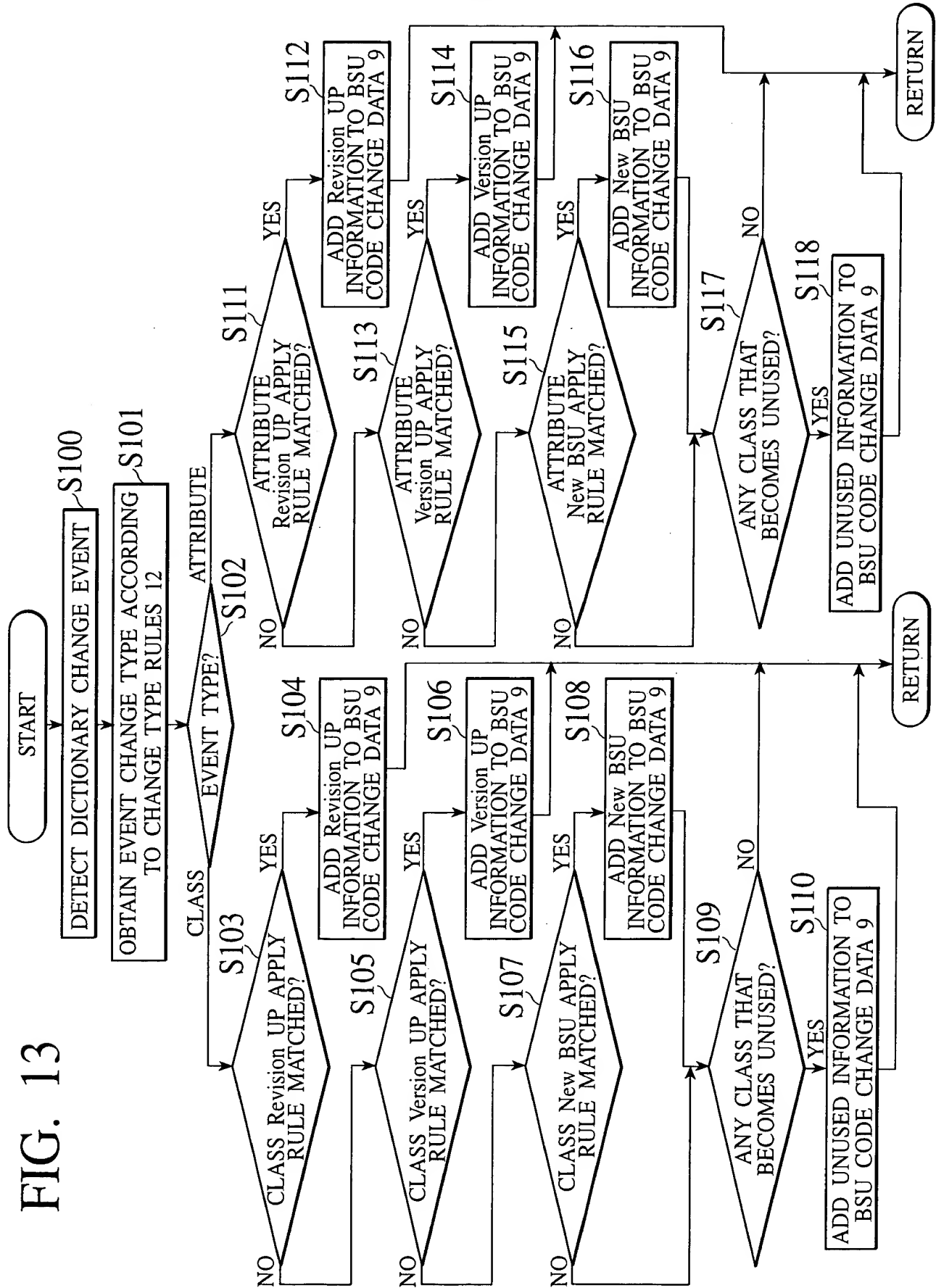
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FIG. 12



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FIG. 13



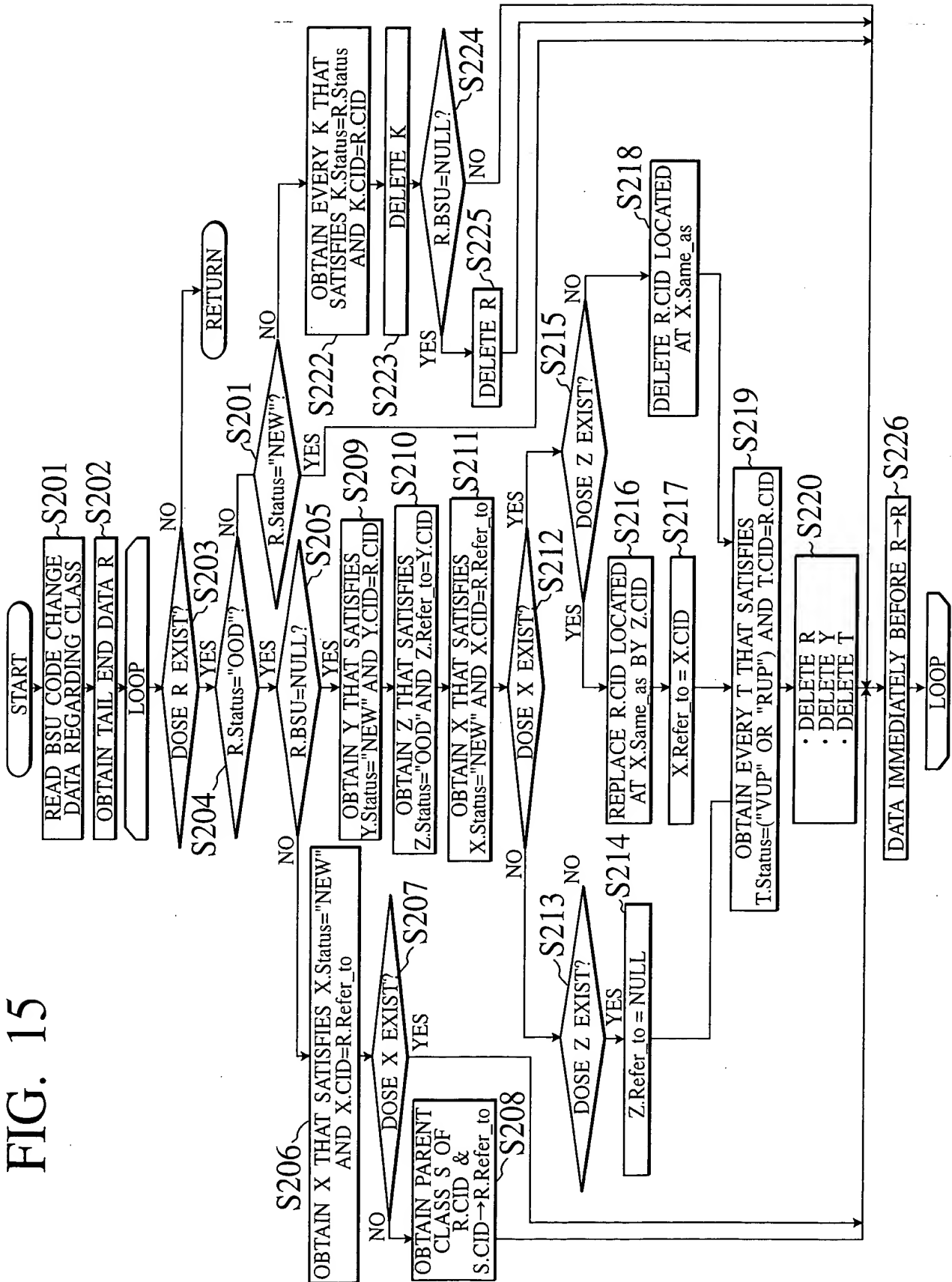
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FIG. 14

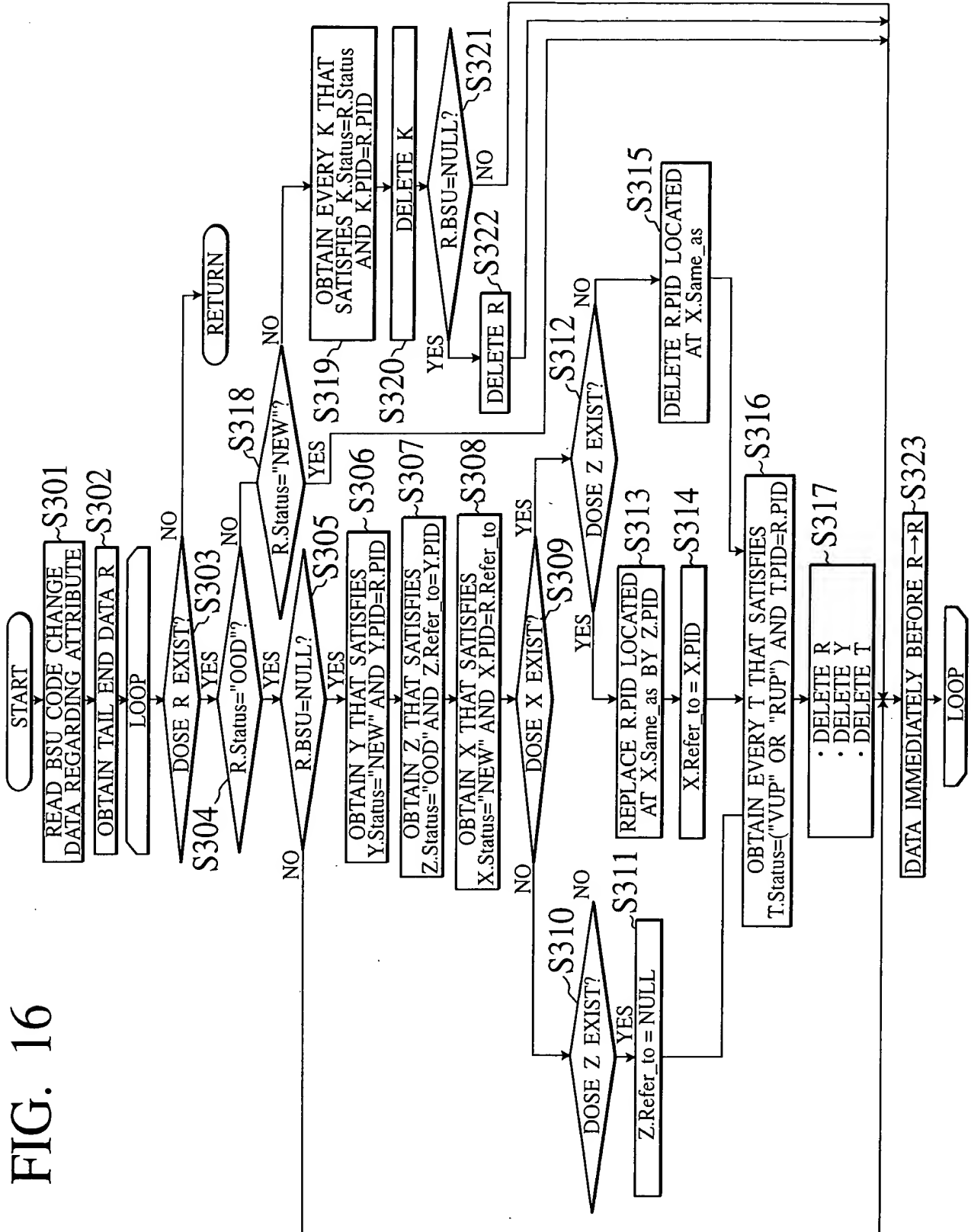
RULE 1 :	IF (CHANGE OF PRODUCT CLASS) AND (CHANGE THAT IS Revision UP AS DESCRIBED IN ISO 13584-42) THEN (Revision UP OF PRODUCT CLASS)
RULE 2 :	IF (CHANGE OF PRODUCT CLASS) AND (CHANGE THAT IS Version UP AS DESCRIBED IN ISO 13584-42) THEN (Version UP OF PRODUCT CLASS)
RULE 3 :	IF (NEW CREATION OF END PRODUCT CLASS) THEN (New BSU OF OF PRODUCT CLASS)
RULE 4 :	IF (MERGE OF PRODUCT CLASS) THEN (New BSU OF PRODUCT CLASS) AND (UNUSED CLASS = PRODUCT CLASS TO BE MERGED)
RULE 5 :	IF (MOVE OF PRODUCT CLASS) AND (TOPOLOGY CHANGE) THEN (New BSU OF PRODUCT CLASS) AND (UNUSED CLASS = PRODUCT CLASS BEFORE MOVING)
RULE 6 :	IF (DELETE OF INTERMEDIATE PRODUCT CLASS) THEN (New BSU OF PRODUCT CLASS) AND (UNUSED CLASS = PRODUCT CLASS TO BE DELETED)
RULE 7 :	IF (INSERT OF INTERMEDIATE PRODUCT CLASS) THEN (New BSU OF PRODUCT CLASS)
RULE 8 :	IF (DELETE OF END PRODUCT CLASS) THEN (UNUSED CLASS = PRODUCT CLASS TO BE DELETED)
RULE 9 :	IF (CHANGE OF ATTRIBUTE) AND (CHANGE THAT IS Revision UP AS DESCRIBED IN ISO 13584-42) THEN (Revision UP OF ATTRIBUTE)
RULE 10 :	IF (CHANGE OF ATTRIBUTE) AND (CHANGE THAT IS Version UP AS DESCRIBED IN ISO 13584-42) THEN (Version UP OF ATTRIBUTE)
RULE 11 :	IF (NEW CREATION OF ATTRIBUTE) THEN (New BSU OF ATTRIBUTE)
RULE 12 :	IF (DELETE OF ATTRIBUTE) THEN (UNUSED ATTRIBUTE = ATTRIBUTE TO BE DELETED)
RULE 13 :	IF (CHANGE OF Name Scope OF ATTRIBUTE) THEN (New BSU OF ATTRIBUTE) AND (UNUSED ATTRIBUTE = ATTRIBUTE BEFORE CHANGE)

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FIG. 15

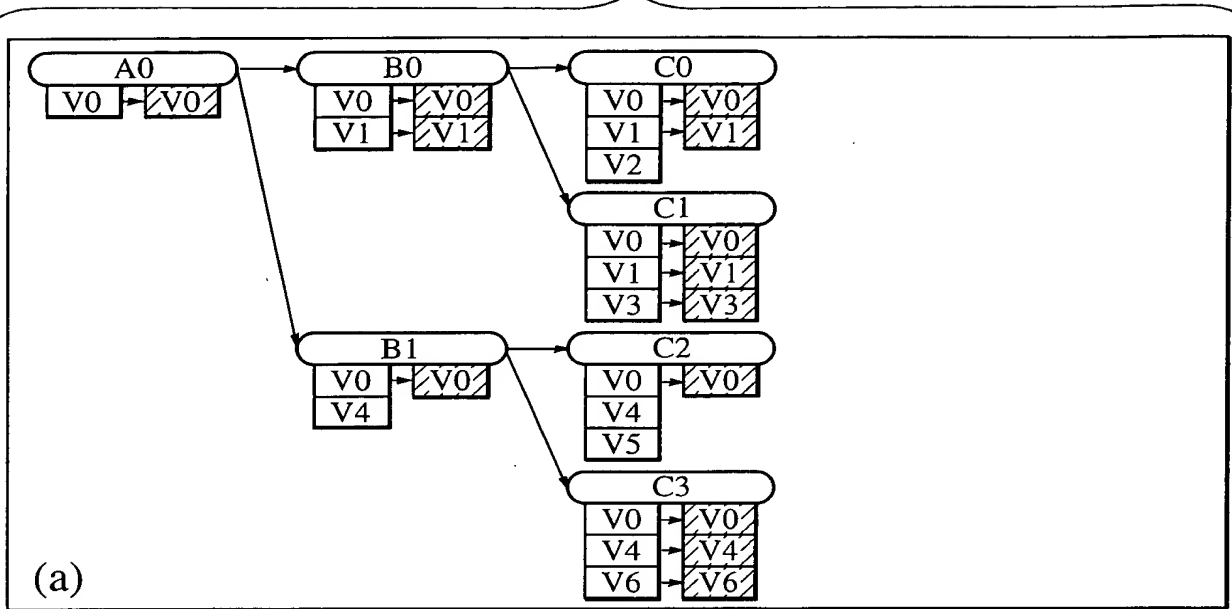


START

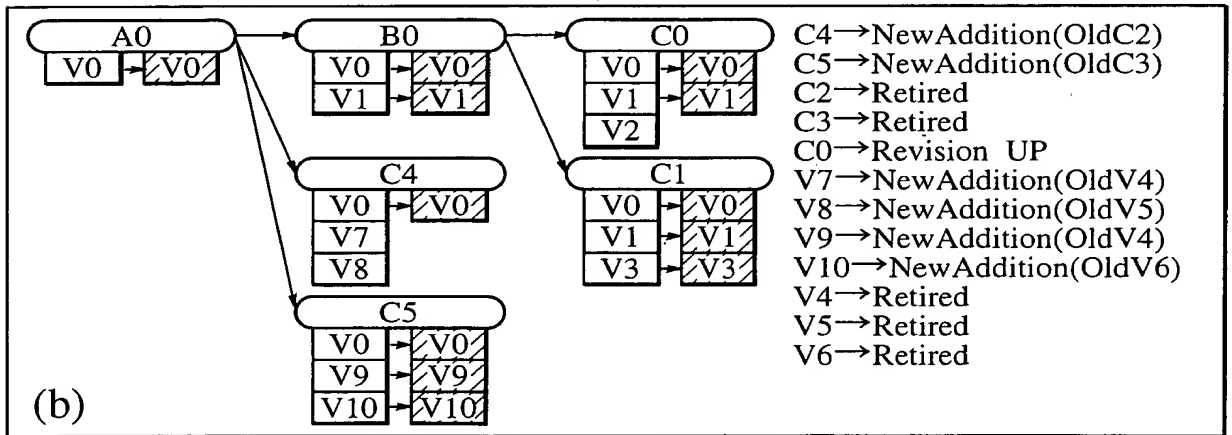


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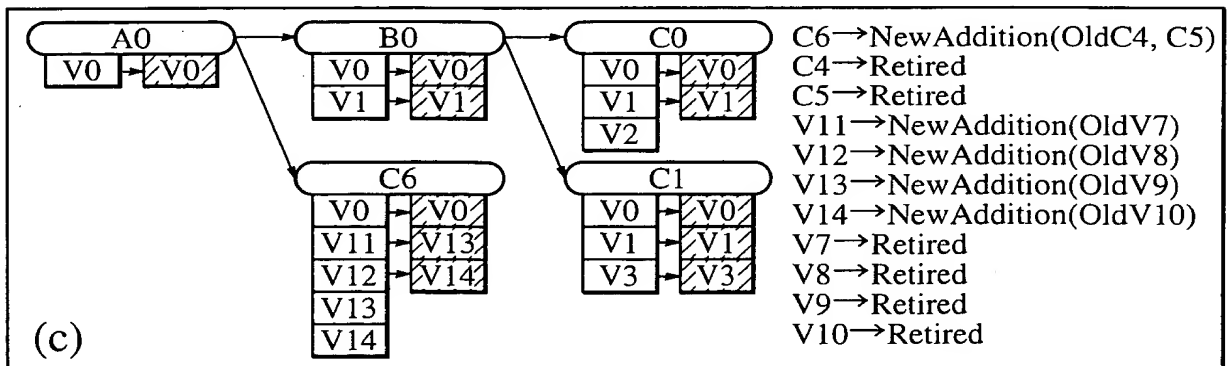
FIG. 17



DELETE B1&CHANGE
NOTE OF C0



MERGE C4&C5



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FIG. 18

CLASS BSU CODE CHANGE DATA

(a)

Status	CID	BSU	Refer to	Same as
NEW	C4	NULL	NULL	C2
NEW	C5	NULL	NULL	C3
OOD	C2	A007	C4	NULL
OOD	C3	A008	C5	NULL
RUP	C0	A006	NULL	NULL
NEW	C6	NULL	NULL	(C4, C5)
OOD	C4	NULL	C6	NULL
OOD	C5	NULL	C6	NULL



(b)

Status	CID	BSU	Refer to	Same as
NEW	C4	NULL	NULL	C2
NEW	C5	NULL	NULL	C3
OOD	C2	A007	C4	NULL
OOD	C3	A008	C6	NULL
RUP	C0	A006	NULL	NULL
NEW	C6	NULL	NULL	(C4, C3)
OOD	C4	NULL	C6	NULL
OOD	C5	NULL	C6	NULL



(c)

Status	CID	BSU	Refer to	Same as
NEW	C4	NULL	NULL	C2
OOD	C2	A007	C4	NULL
OOD	C3	A008	C6	NULL
RUP	C0	A006	NULL	NULL
NEW	C6	NULL	NULL	(C4, C3)
OOD	C4	NULL	C6	NULL



(d)

Status	CID	BSU	Refer to	Same as
NEW	C4	NULL	NULL	C2
OOD	C2	A007	C6	NULL
OOD	C3	A008	C6	NULL
RUP	C0	A006	NULL	NULL
NEW	C6	NULL	NULL	(C2, C3)
OOD	C4	NULL	C6	NULL



(e)

Status	CID	BSU	Refer to	Same as
OOD	C2	A007	C6	NULL
OOD	C3	A008	C6	NULL
RUP	C0	A006	NULL	NULL
NEW	C6	NULL	NULL	(C2, C3)

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FIG. 19

ATTRIBUTE BSU CODE CHANGE DATA

(a)

Status	PID	BSU	Refer to	Same as
NEW	V7	NULL	NULL	V4
NEW	V8	NULL	NULL	V5
NEW	V9	NULL	NULL	V4
NEW	V10	NULL	NULL	V6
OOD	V4	P004	(V7, V9)	NULL
OOD	V5	P005	V8	NULL
OOD	V6	P006	V10	NULL
NEW	V11	NULL	NULL	V4
NEW	V12	NULL	NULL	V5
NEW	V13	NULL	NULL	V4
NEW	V14	NULL	NULL	V6
OOD	V7	NULL	V11	NULL
OOD	V8	NULL	V12	NULL
OOD	V9	NULL	V13	NULL
OOD	V10	NULL	V14	NULL

(b)

Status	PID	BSU	Refer to	Same as
NEW	V7	NULL	NULL	V4
NEW	V8	NULL	NULL	V5
NEW	V9	NULL	NULL	V4
NEW	V10	NULL	NULL	V6
OOD	V4	P004	(V7, V9)	NULL
OOD	V5	P005	V8	NULL
OOD	V6	P006	V14	NULL
NEW	V11	NULL	NULL	V7
NEW	V12	NULL	NULL	V8
NEW	V13	NULL	NULL	V9
NEW	V14	NULL	NULL	V6
OOD	V7	NULL	V11	NULL
OOD	V8	NULL	V12	NULL
OOD	V9	NULL	V13	NULL
OOD	V10	NULL	V14	NULL

(c)

Status	PID	BSU	Refer to	Same as
NEW	V7	NULL	NULL	V4
NEW	V8	NULL	NULL	V5
NEW	V9	NULL	NULL	V4
OOD	V4	P004	(V7, V9)	NULL
OOD	V5	P005	V8	NULL
OOD	V6	P006	V14	NULL
NEW	V11	NULL	NULL	V7
NEW	V12	NULL	NULL	V8
NEW	V13	NULL	NULL	V9
NEW	V14	NULL	NULL	V6
OOD	V7	NULL	V11	NULL
OOD	V8	NULL	V12	NULL
OOD	V9	NULL	V13	NULL

(d)

Status	PID	BSU	Refer to	Same as
NEW	V7	NULL	NULL	V4
NEW	V8	NULL	NULL	V5
NEW	V9	NULL	NULL	V4
OOD	V4	P004	(V7, V13)	NULL
OOD	V5	P005	V8	NULL
OOD	V6	P006	V14	NULL
NEW	V11	NULL	NULL	V7
NEW	V12	NULL	NULL	V8
NEW	V13	NULL	NULL	V4
NEW	V14	NULL	NULL	V6
OOD	V7	NULL	V11	NULL
OOD	V8	NULL	V12	NULL
OOD	V9	NULL	V13	NULL

(e)

Status	PID	BSU	Refer to	Same as
NEW	V7	NULL	NULL	V4
NEW	V8	NULL	NULL	V5
OOD	V4	P004	(V7, V13)	NULL
OOD	V5	P005	V8	NULL
OOD	V6	P006	V14	NULL
NEW	V11	NULL	NULL	V7
NEW	V12	NULL	NULL	V8
NEW	V13	NULL	NULL	V4
NEW	V14	NULL	NULL	V6
OOD	V7	NULL	V11	NULL
OOD	V8	NULL	V12	NULL

(f)

Status	PID	BSU	Refer to	Same as
NEW	V7	NULL	NULL	V4
NEW	V8	NULL	NULL	V5
OOD	V4	P004	(V7, V13)	NULL
OOD	V5	P005	V12	NULL
OOD	V6	P006	V14	NULL
NEW	V11	NULL	NULL	V7
NEW	V12	NULL	NULL	V5
NEW	V13	NULL	NULL	V4
NEW	V14	NULL	NULL	V6
OOD	V7	NULL	V11	NULL
OOD	V8	NULL	V12	NULL

(g)

Status	PID	BSU	Refer to	Same as
NEW	V7	NULL	NULL	V4
OOD	V4	P004	(V7, V13)	NULL
OOD	V5	P005	V12	NULL
OOD	V6	P006	V14	NULL
NEW	V11	NULL	NULL	V7
NEW	V12	NULL	NULL	V5
NEW	V13	NULL	NULL	V4
NEW	V14	NULL	NULL	V6
OOD	V7	NULL	V11	NULL

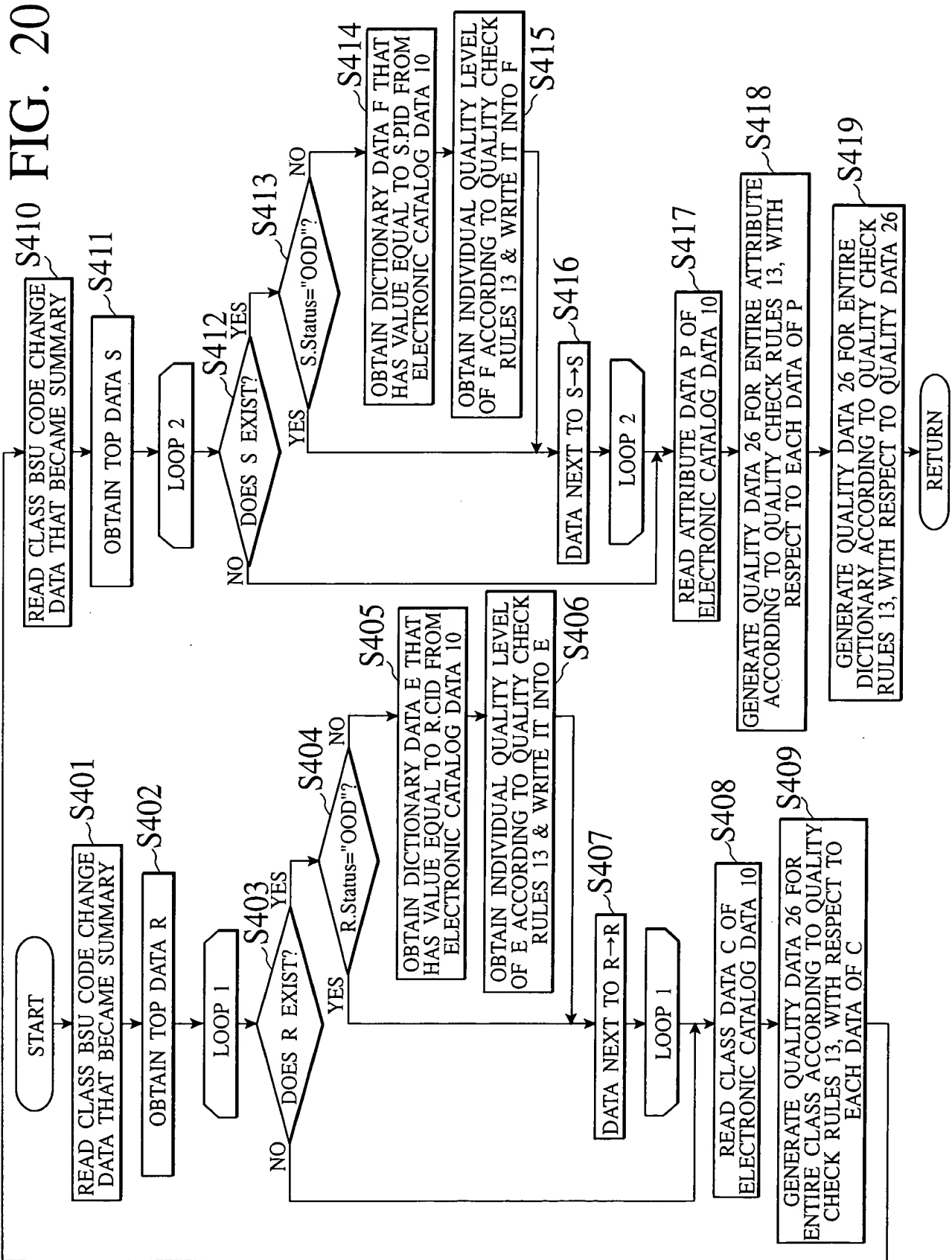
(h)

Status	PID	BSU	Refer to	Same as
NEW	V7	NULL	NULL	V4
OOD	V4	P004	(V7, V13)	NULL
OOD	V5	P005	V12	NULL
OOD	V6	P006	V14	NULL
NEW	V11	NULL	NULL	V4
NEW	V12	NULL	NULL	V5
NEW	V13	NULL	NULL	V4
NEW	V14	NULL	NULL	V6
OOD	V7	NULL	V11	NULL

(i)

Status	PID	BSU	Refer to	Same as
OOD	V4	P004	(V11, V13)	NULL
OOD	V5	P005	V12	NULL
OOD	V6	P006	V14	NULL
NEW	V11	NULL	NULL	V4
NEW	V12	NULL	NULL	V5
NEW	V13	NULL	NULL	V4
NEW	V14	NULL	NULL	V6

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FIG. 21A

RULE 1 :	IF (E=PRODUCT CLASS) AND (INDIVIDUAL CHECK) THEN(E.QUALITY LEVEL=EVALUATION FUNCTION F1 (E))
RULE 2 :	IF (E=ATTRIBUTE CLASS) AND (INDIVIDUAL CHECK) THEN(E.QUALITY LEVEL=EVALUATION FUNCTION F2(E))
RULE 3 :	IF (E=PRODUCT CLASS) AND (SYSTEM CHECK) THEN(SYSTEM QUALITY LEVEL L1=EVALUATION FUNCTION F3 (E))
RULE 4 :	IF (E=ATTRIBUTE CLASS) AND (SYSTEM CHECK) THEN(SYSTEM QUALITY LEVEL L1=EVALUATION FUNCTION F4(E))
RULE 5:	IF (E=DICTIONARY) THEN(SYSTEM QUALITY LEVEL L1=EVALUATION FUNCTION F5(E))

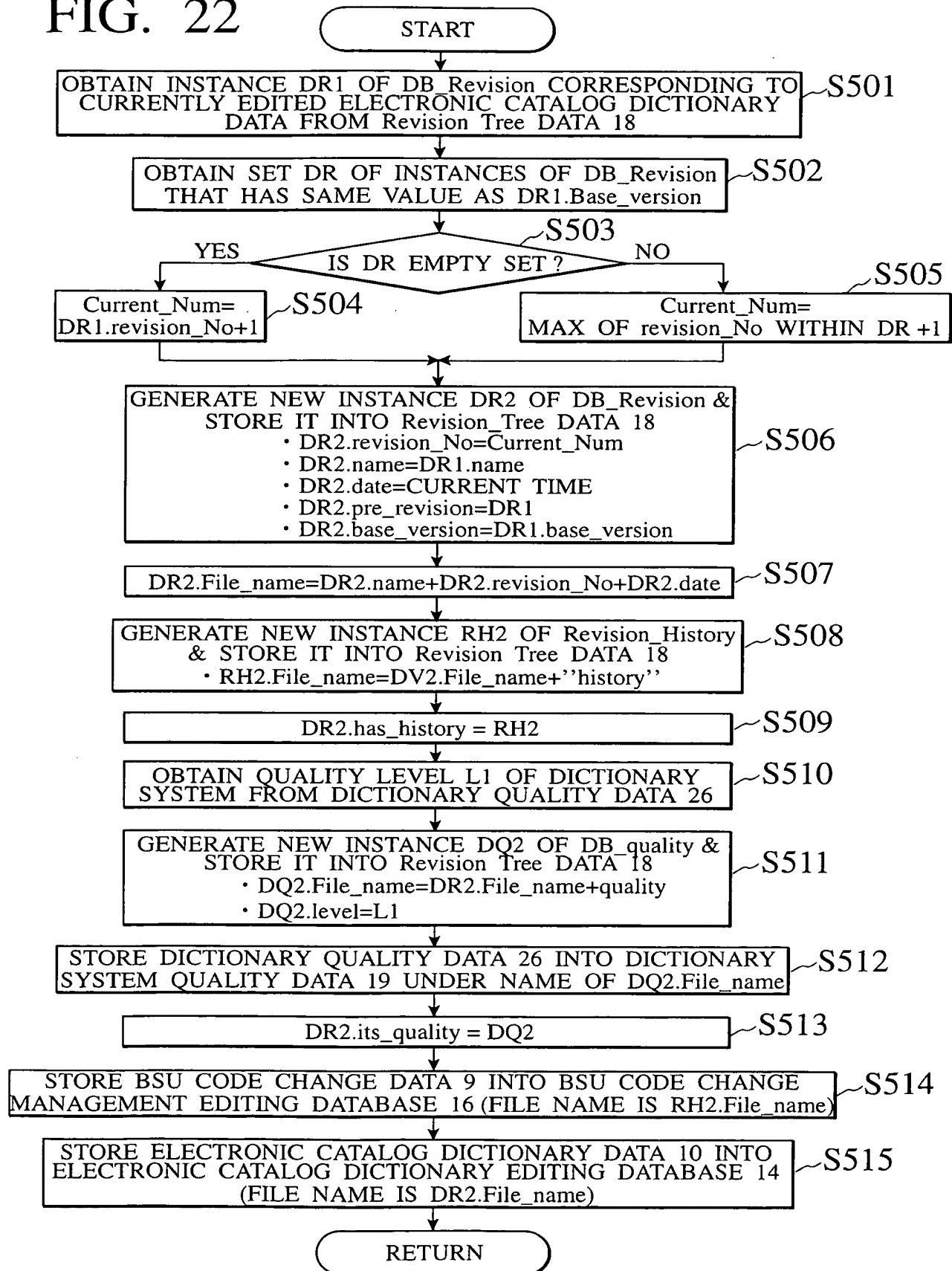
EVALUATION FUNCTION 1:	IF((Y=# OF ATTRIBUTES DESCRIBED IN X/ # OF ATTRIBUTES OF X)>0.9)THEN QUALITY LEVEL="A"
	ELSE IF (0.9 \geq Y>0.6) THEN QUALITY LEVEL="B"
	ELSE IF (0.6 \geq Y>0.4) THEN QUALITY LEVEL="C"
	ELSE IF (0.4 \geq Y) THEN QUALITY LEVEL="D"
EVALUATION FUNCTION 2:	IF((Y=# OF ATTRIBUTES DESCRIBED IN X/ # OF ATTRIBUTES OF X)>0.95)THEN QUALITY LEVEL="A"
	ELSE IF (0.95 \geq Y>0.8) THEN QUALITY LEVEL="B"
	ELSE IF (0.8 \geq Y>0.6) THEN QUALITY LEVEL="C"
	ELSE IF (0.6 \geq Y) THEN QUALITY LEVEL="D"
EVALUATION FUNCTION 3:	IF (X!= END CLASS) AND (# OF SUB-CLASSES OF X=1)
	THEN L1=L1+1, Return ("X.CID", "THERE IS ONE SUB_CLASS")
EVALUATION FUNCTION 4:	IF (X.Same-as!=NULL) AND (NOT (Z.CID=X.Same_as) AND (Z.Status="OOD"))
	THEN L1=L1+1, Return ("X.CID", "SAME AS X.Same_as"))
EVALUATION FUNCTION 5:	IF (L1<5) THEN QUALITY LEVEL = "A"
	ELSE IF (10 \geq L1>5) THEN QUALITY LEVEL="B"
	ELSE IF (50 \geq L1>10) THEN QUALITY LEVEL="C"
	ELSE IF (50>L1) THEN QUALITY LEVEL="D"

FIG. 21B

RULE 1 :	IF ISSUING OF CLASS BSU THEN BSU CODE ="A"+MAX OF CURRENT CLASS BSU ISSUED No.+1
RULE 2 :	IF ISSUING OF ATTRIBUTE BSU THEN BSU CODE = "P"+MAX OF CURRENT ATTRIBUTE BSU ISSUED No.+1

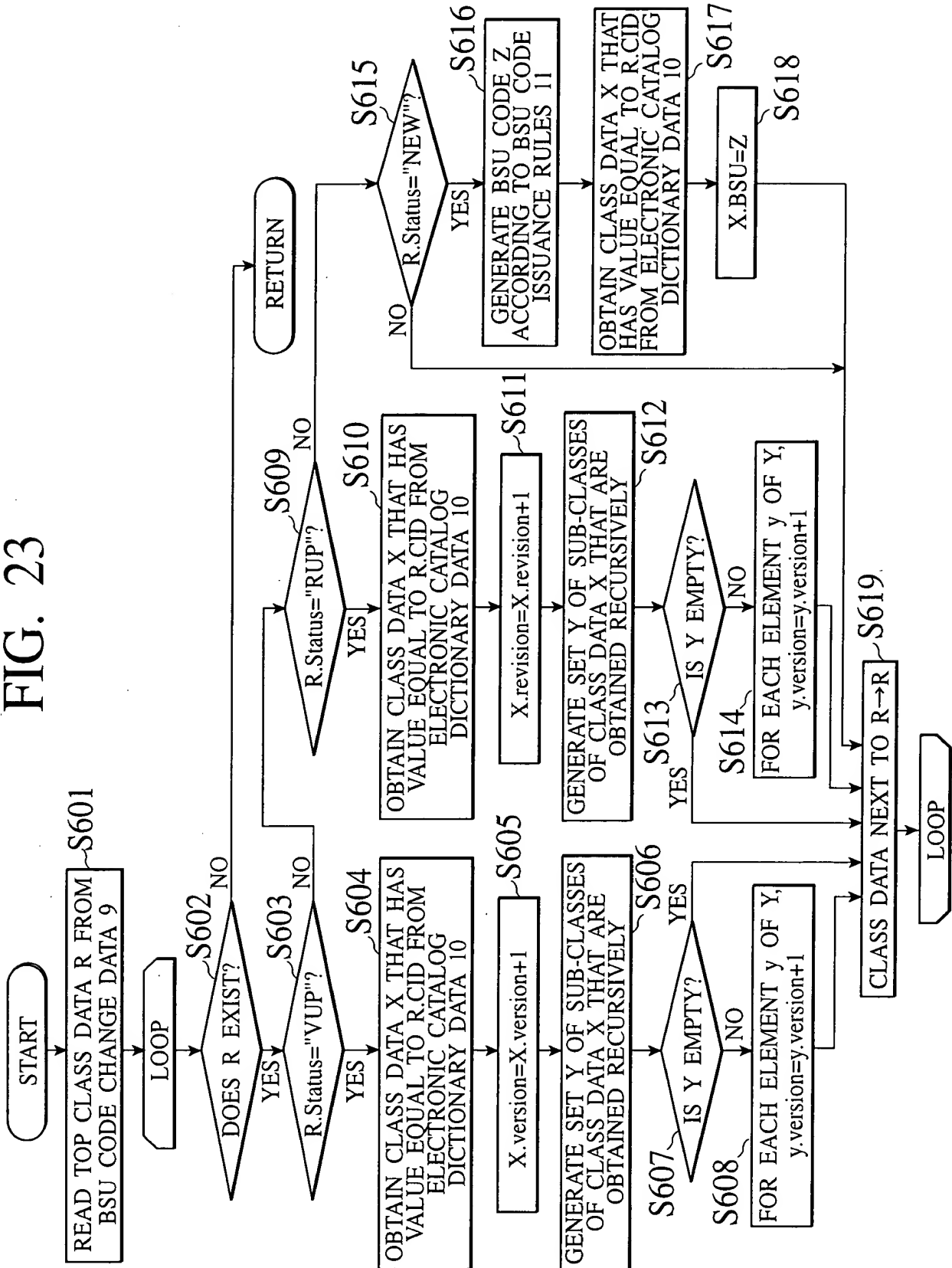
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FIG. 22



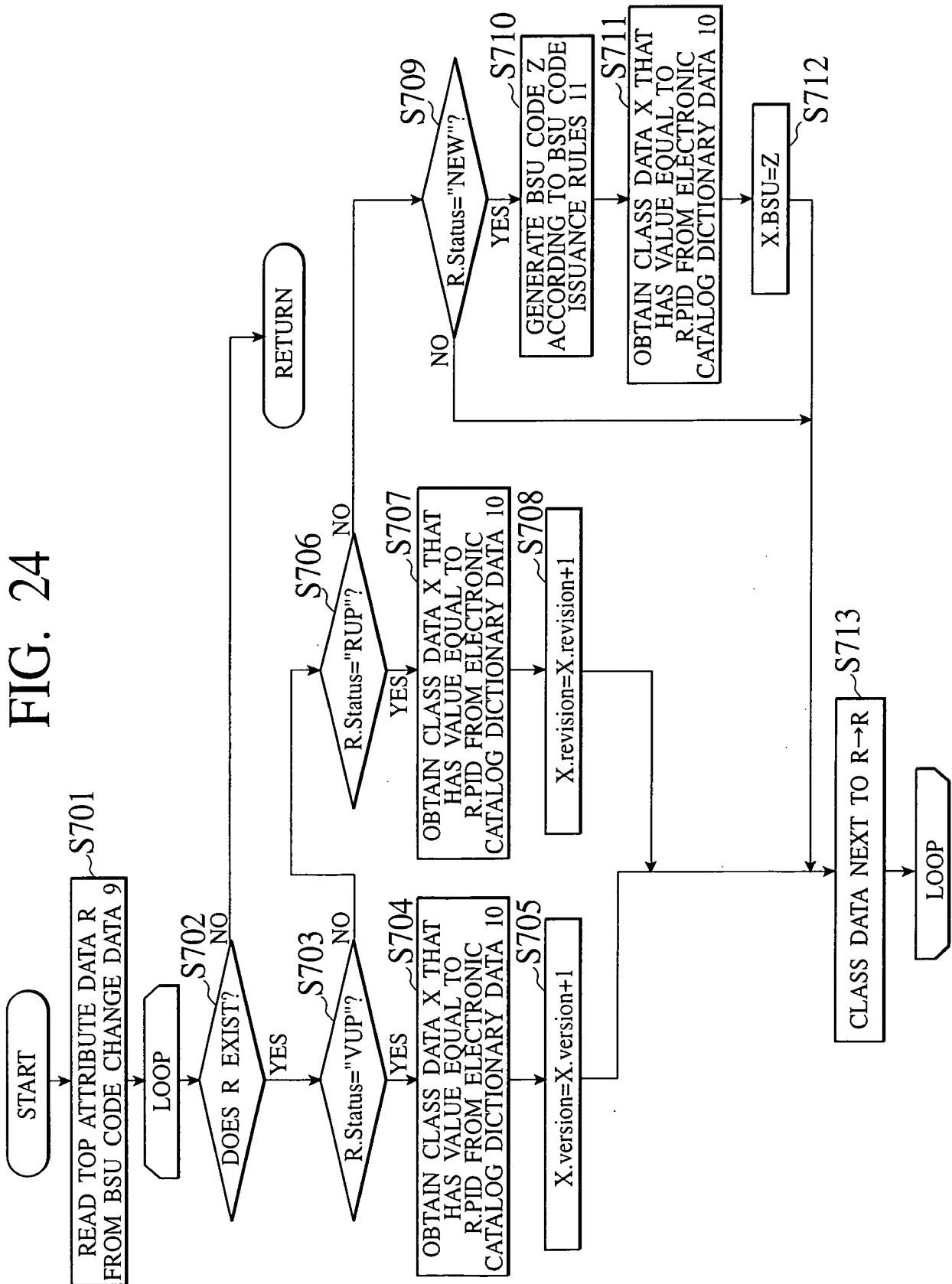
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FIG. 23



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FIG. 24



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FIG. 25

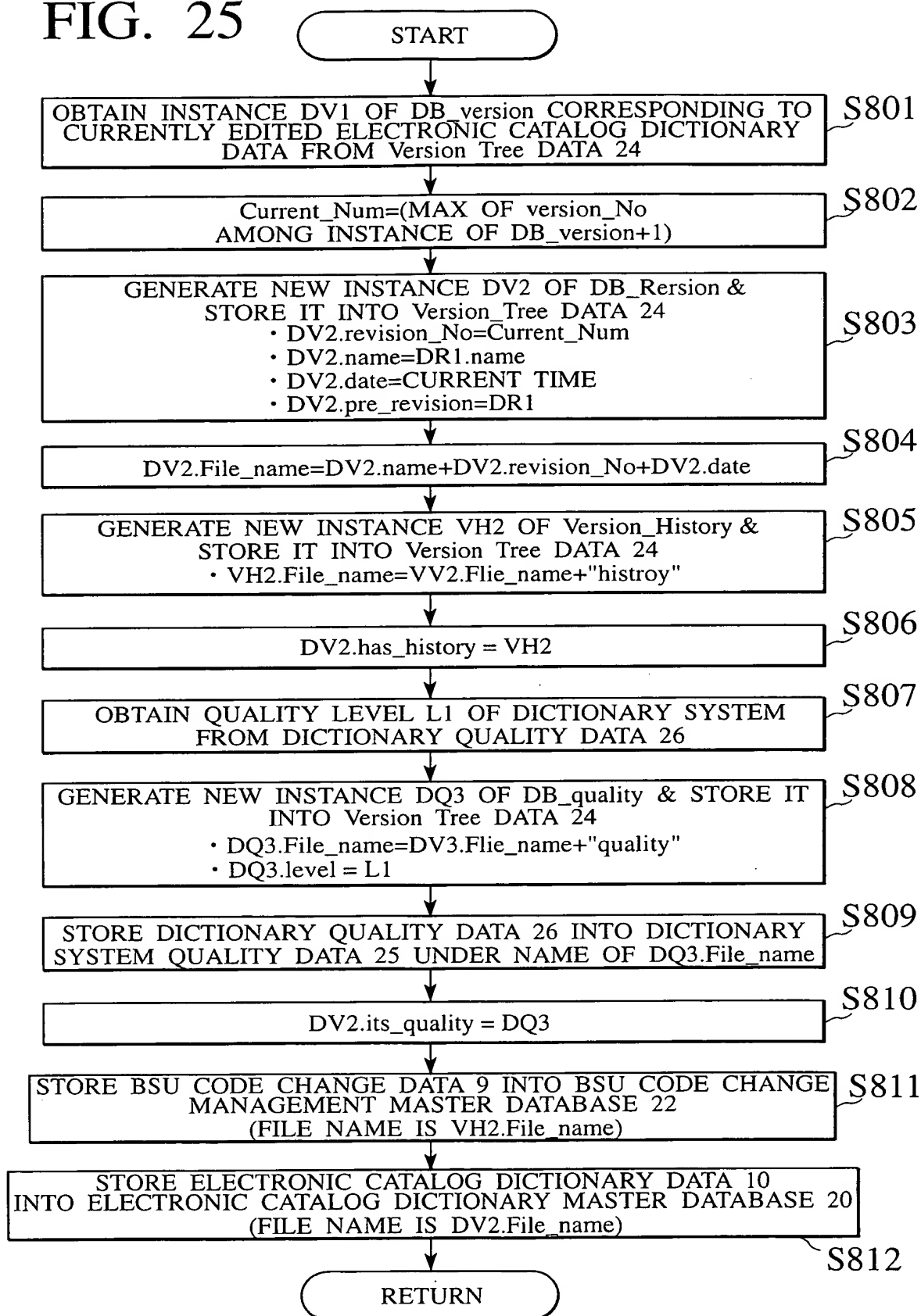


FIG. 26

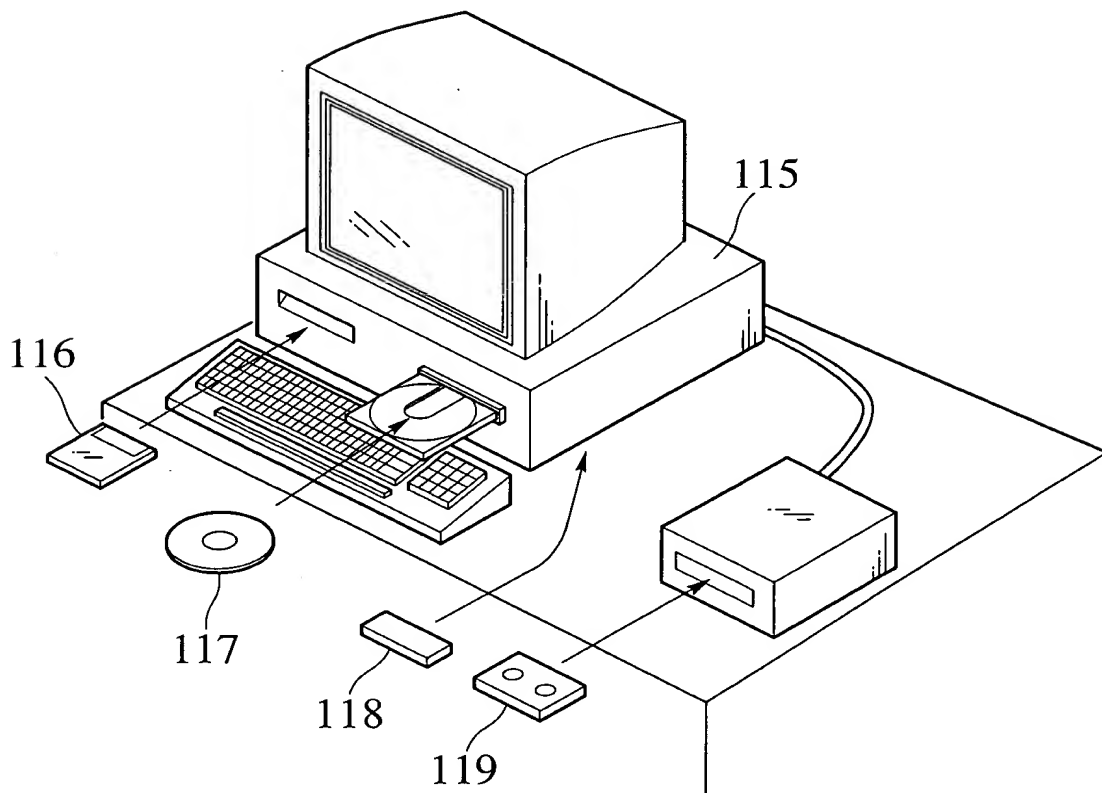


FIG. 27
PRIOR ART

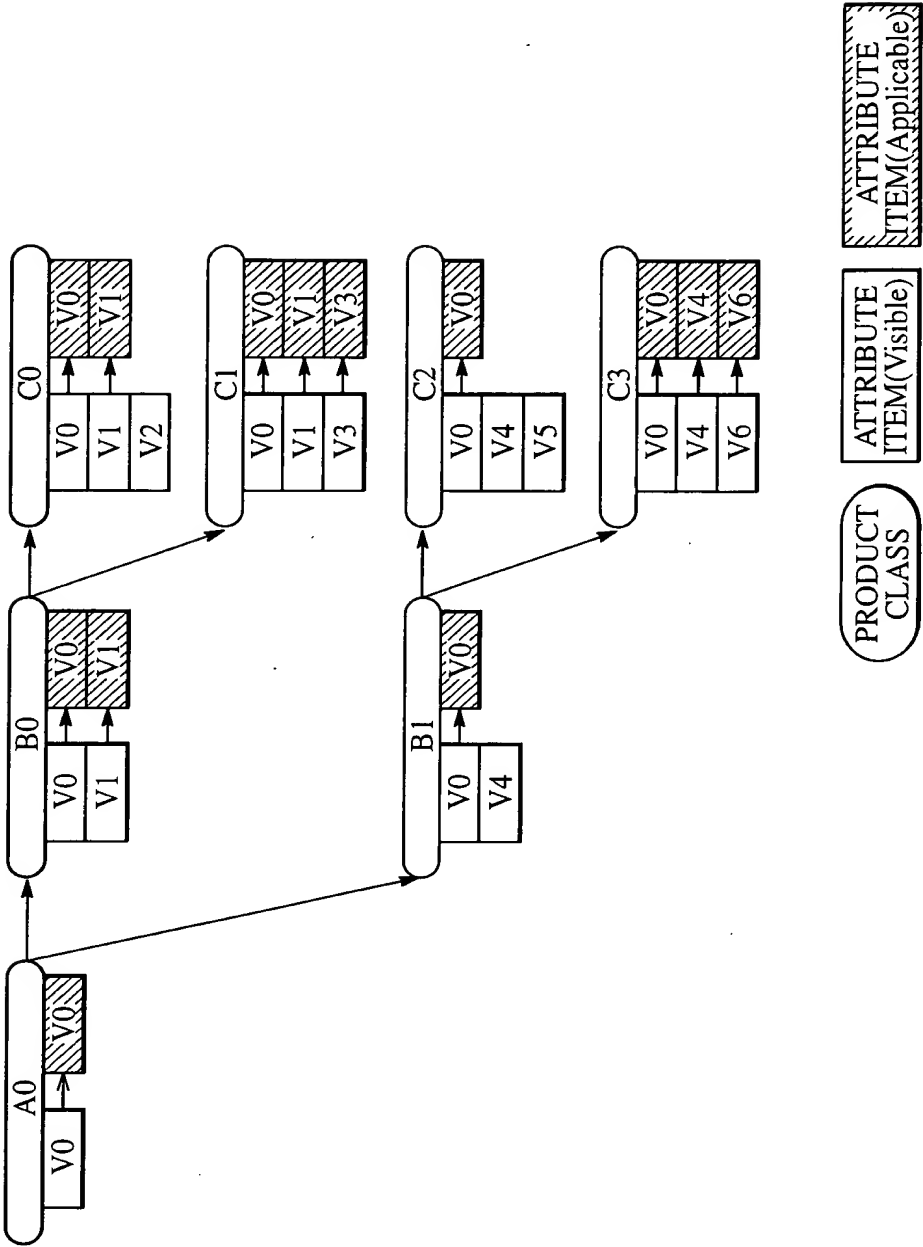


FIG. 28A

Regarding Rev/Ver of Property

Concept model	i Data model	Add	Change	Delete
Code	Property_BSU.code	—	X	X
Definition Class	Property_BSU.name_scope	X	X	X
Data_type	Property_DET.domain	—	V(※8)	X
Preferred Name	item_name.name	—	R	X
Short Name	item_name.Short_name	—	R	X
Preferred Letter Symbol	Property_DET.preferred_symbol	R	R	X
Synonymous Letter Symbol	Property_DET.synonymous_symbols	R	R	R
Synonymous Name	item_name.Synonymous_names	R	R	R
Property_Type Classification	Property_DET.DET_classification	—	R(※9)	X
Definition	Property_DET.definition	—	R/V(※10)	X
Source Document of definition	identified_document.document_identifier	R(※11)	R(※11)	R
Note	Property_DET.note	R(※11)	R(※11)	R
Remark	Property_DET.remark	R(※11)	R(※11)	R
Unit	int/real_measure_type.unit.structured_representation	—	X	X
Condition	Property_DET.depends_on	X	X/R(※12)	X
Formula	Property_DET.formula	R(※11)	R(※11)	R(※11)
Format	Property_DET.domain.simple_type.value_format	—	V	X
Date of Original Definition	dates.date_of_original_definition	—	X	X
Date of current version	dates.date_of_current_version	—	V	X
Date of current revision	dates.date_of_current_revision	—	R/V	X
Version number	Property_BSU.version	—	V	X
Revision number	Property_DET.revision	—	R	X

※8 Change of Data_type itself not allowed. Possible are:

- 1.Addition of option of enumeration type data
- 2.Change of Version of class constituting attribute range(ex.is part of relationship)
- 3.Change of Version of Data_type BSU

※9 Only in case of Rev change of ISO31 or ISO13584.

※10 Change of definition that affects Property is not allowed. But processing for evaluating value of this Property may be Changed. Ver change in such case, or Rev change otherwise.

※11 Change of definition that affects Property is not allowed.

※12 Change of Condition_DET is not allowed. Version change of Condition_DET will propagate to Depend_P_DET.

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FIG. 28B

Regarding Rev/Ver of Class

Concept model	i Data model	Add	Change	Delete
Code	Class_BSU.code	—	X	X
Super Class	Class.its_superclass	V(※15)	V(※12)	V(※12)
Preferred Name	item_name.name	—	R	X
Short Name	item_name.Short_name	V	V(※16)	X
Visible Type	Class_BSU.added_visible_data_type	V	V(※16)	X
Applicable Type	Class.defined_types	V	V(※16)	X
Sub-class selection Property	class.sub_class_properties	R	R	R
Synonymous Name	item_name.Synonymous_names	V	V(※16)	X
Visible Property	Class_BSU.added_visible_property	V	V(※16)	X
Applicable Property	Described_by	V	V(※16)	X
Class Value assignment	Class.class_constant_values	—	R/V(※17)	X
Definition	Property_DET.definition	R	R	R
Source Document of definition	identified_document.document_identifier	R	R	R
Note	Property_DET.note	R	R	R
Remark	Property_DET.remark	—	R	R
Simplified Drawing	Class.simplified_drawing	—	X	X
Date of Original Definition	dates.date_of_original_definition	—	V	X
Date of current version	dates.date_of_current_version	—	R/V	X
Date of current revision	dates.date_of_current_revision	—	V	X
Version number	Property_BSU.version	—	R	X
Revision number	Property_BSU.revision	—	R	X

※13 Value can only be added.

※14 Change of arbitrary element of Dependent_P_DET Set.

※15 Property/Data_type of inherited Visible/Applicable Should not be deleted by

change of Super Class. This occurs when (1) new Version is created by Sub-Class, or(2) intermediate class is inserted.

※16 Change is only addition of new Item or change of Version of Item to be referred.

※17 Change of definition that affects Property is not allowed.

Propagation of change of Class V/R

- Version change of parent class→Version change of all children classes (grand children classes)
- Version change of Table or contents that refer to class→Version change of that class

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FIG. 29
PRIOR ART

CREATION OF END CLASS

AAA			
	└	BBB	
		└	CCC
			DDD
			└
			EEE

Newly Create



AAA			
	└	BBB	
		└	CCC
			DDD
			└
			EEE
			FFF

Class Name : FFF			
Visible		Applicable	Inherit
YYY	×	YYY	DDD
ZZZ	→		DDD

Class HHH → NewBSU

FIG. 30
PRIOR ART

DELETION OF END CLASS

AAA			
	└	BBB	
		└	CCC
			DDD
			└
			EEE
			HHH

Class Name : HHH			
Visible		Applicable	Inherit
YYY	×	YYY	DDD
ZZZ	→		DDD
SSS	→		



AAA			
	└	BBB	
		└	CCC
			DDD
			└
			EEE
			HHH

Delete



AAA			
	└	BBB	
		└	CCC
			DDD
			└
			EEE



Old HHH → Retired
Old SSS → Retired

MERGING OF CLASSES

The diagram illustrates a sequence of operations on a 10x10 grid. The grid is divided into four quadrants. The top-left quadrant contains the text 'AAA' and 'BBB'. The top-right quadrant contains the text 'CCC' and 'DDD'. The bottom-left quadrant contains the text 'EEE' and 'FFF'. The bottom-right quadrant contains the text 'GGG' and 'HHH'. A 'Merge' box is located at the bottom right, with an arrow pointing to the 'GGG' and 'HHH' area.

AAA					
└ BBB					
	└ CCC				
	└ DDD				
		└	■///		
				└ FFF	
				└ GGG	

AAA				
	BBB			
		CCC		
		DDD		
			EEE	
			FFF	
			GGG	

Class Name : EEE
Class Name : HHH

OR TYPE MERGE

Class Name : KKK		
Visible		Applicable Inherit
YYY	x	YYY DDD
ZZZ	→	ZZZ
XXX	→	

AND TYPE MERGE

Class Name: KKK		
Visible	Applicable	Inherit
YYY	x YYY	DDD

Attribute Name: ZZZ → : Vanish

CLASS NAME : FFF		
Visible	Applicable	Inherit
YYY	× YYY	DDD
XXX	→	HHH
SSS	→	

CLASS NAME : FFF	
Visible	Applicable Inherit
YYY	× YYY
ZZZ	→ ZZZ
XXX	→
SSS	→

CLASS NAME : FFF		
Visible		Applicable
YYY	×	YYY
XXX	→	DDD
SSS	→	

✖Attribute SSS of HHH is inherited to lower level

Attribute SSS of EEE is vanished as there is no one to inherit

×Among attributes common to classes to be merged:

1: an attribute is Applicable in new class if it is Applicable in all classes

2: an attribute is Visible in new class if it is Visible in at least one class

✖Among attributes not common to classes to be merged:

1: an attribute is Visible in new class

$$\left\{ \begin{array}{l} \text{Class EEE} \rightarrow \text{Retired} \\ \text{Class HHH} \rightarrow \text{Retired} \end{array} \right.$$

Class KKK → NewBSU
Attribute ZZZ → NewBSU✖4
Attribute XXX → NewBSU✖4
Old ZZZ → Retired
Old XXX → Retired

Class FFF → NewBSU※3&2
Old FFF → Retired
Attribute SSS → NewBSU※4
Old SSS → Retired

$$\left\{ \begin{array}{l} \text{Class KKK} \rightarrow \text{NewBSU} \\ \text{Class FFF} \rightarrow \text{NewBSU}\times 3 \& 2 \\ \text{Attribute XXX} \rightarrow \text{NewBSU}\times 4 \\ \text{Attribute SSS} \rightarrow \text{NewBSU}\times 4 \\ \text{Old ZZZ} \rightarrow \text{Retired} \\ \text{Old XXX} \rightarrow \text{Retired} \\ \text{Old SSS} \rightarrow \text{Retired} \end{array} \right.$$

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FIG. 32
PRIOR ART

MOVING OF CLASS (I)

AAA					
	BBB				
		CCC			
		DDD			
			HHH	III	

Move

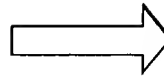


AAA					
	BBB				
		CCC			
		DDD			
			HHH	III	



AAA					
	BBB				
		CCC			
		DDD			
			HHH	III	

Class Name : HHH			
Visible		Applicable	Inherit
SSS	x	SSS	BBB
YYY	→		DDD
ZZZ	→		



Class Name : HHH			
Visible		Applicable	Inherit
SSS	x	SSS	BBB
YYY	→		
ZZZ	→		

Class HHH → NewBSU*3&2
Old HHH → Retired

Attribute YYY → NewBSU*4
Attribute ZZZ → NewBSU*4
Old ZZZ → Retired

*Old YYY is used in Class III

*YYY & DDD are overlapping

FIG. 33 PRIOR ART

MOVING OF CLASS (2)

Example
2

AAA			
-	BBB		
		CCC	
		DDD	
			HHH
			III
	EEE	FFF	
		GGG	
			JJJ
			KKK

Move

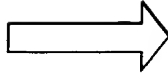


AAA			
-	BBB		
		CCC	
		DDD	
			HHH
			III
	EEE	FFF	
		GGG	
			JJJ
			KKK



AAA			
-	BBB		
		CCC	
		DDD	
			III
	EEE	FFF	
		GGG	
			JJJ
			KKK
			HHH

Class Name : HHH			
Visible		Applicable	Inherit
SSS	x	SSS	BBB
YYY	→		DDD
ZZZ	→		



Class Name : HHH			
Visible		Applicable	Inherit
TTT	x	TTT	EEE
SSS	→		
YYY	→		
ZZZ	→		

Class HHH → NewBSU*3
Old HHH → Retired
Attribute SSS → NewBSU*4
Attribute YYY → NewBSU*4
Attribute ZZZ → NewBSU*4
Old ZZZ → Retired
*Old SSS is used in Class DDD
*Old YYY is used in Class III

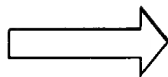
*Inherited attribute is changed to direct attribute
*New inherited attribute is added
*SSS & YYY are overlapping → Assist Function

MOVING OF CLASS (3)

[illegible]

Class Name : DDD		
Visible	Applicable	Inherit
SSS	×	SSS BBB
ZZZ	↑	

Class Name : HHH			
Visible		Applicable	Inherit
SSS	×	SSS	BBB
ZZZ	↑		DDD
XXX	↑		



AAA					
—	BBB				
	—	CCC			
	—	DDD			
		—	HHH		
			—	III	

AAA			
-	BBB		
	-	CCC	
	-	DDD	
	-	HHH	
		III	

Class Name : DDD		
Visible		Applicable Inherit
SSS	×	SSS
ZZZ	→	

Class Name : HHH		
Visible		Applicable Inherit
SSS	×	SSS
ZZZ	→	DDD
XXX	→	DDD

✖Inherited attribute is changed to direct attribute

Class DDD → New BSU*3&2
 Old DDD → Retired
 Attribute SSS → New BSU*4
 *Old SSS is used in Class BBB
 Attribute ZZZ → New BSU*4
 Old ZZZ → Retired

Class HHH → New BSU※2
Old HHH → Retired
Attribute XXX → New BSU※4
Old XXX → Retired

Similarly for Class III

FIG. 35
PRIOR ART

MOVING OF CLASS (4)

Example 4

AAA				
	BBB			
		CCC		
		DDD		
			HHH	
			III	Move

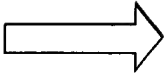


AAA				
	BBB			
		CCC		
		DDD		
			HHH	
			III	



AAA				
	BBB			
		CCC		
		DDD		
			HHH	
			III	

Class Name : DDD				
Visible		Applicable	Inherit	
SSS	x	SSS	BBB	
ZZZ		→		



Class Name : HHH				
Visible		Applicable	Inherit	
SSS	x	SSS	BBB	
ZZZ		→	DDD	
XXX		→		

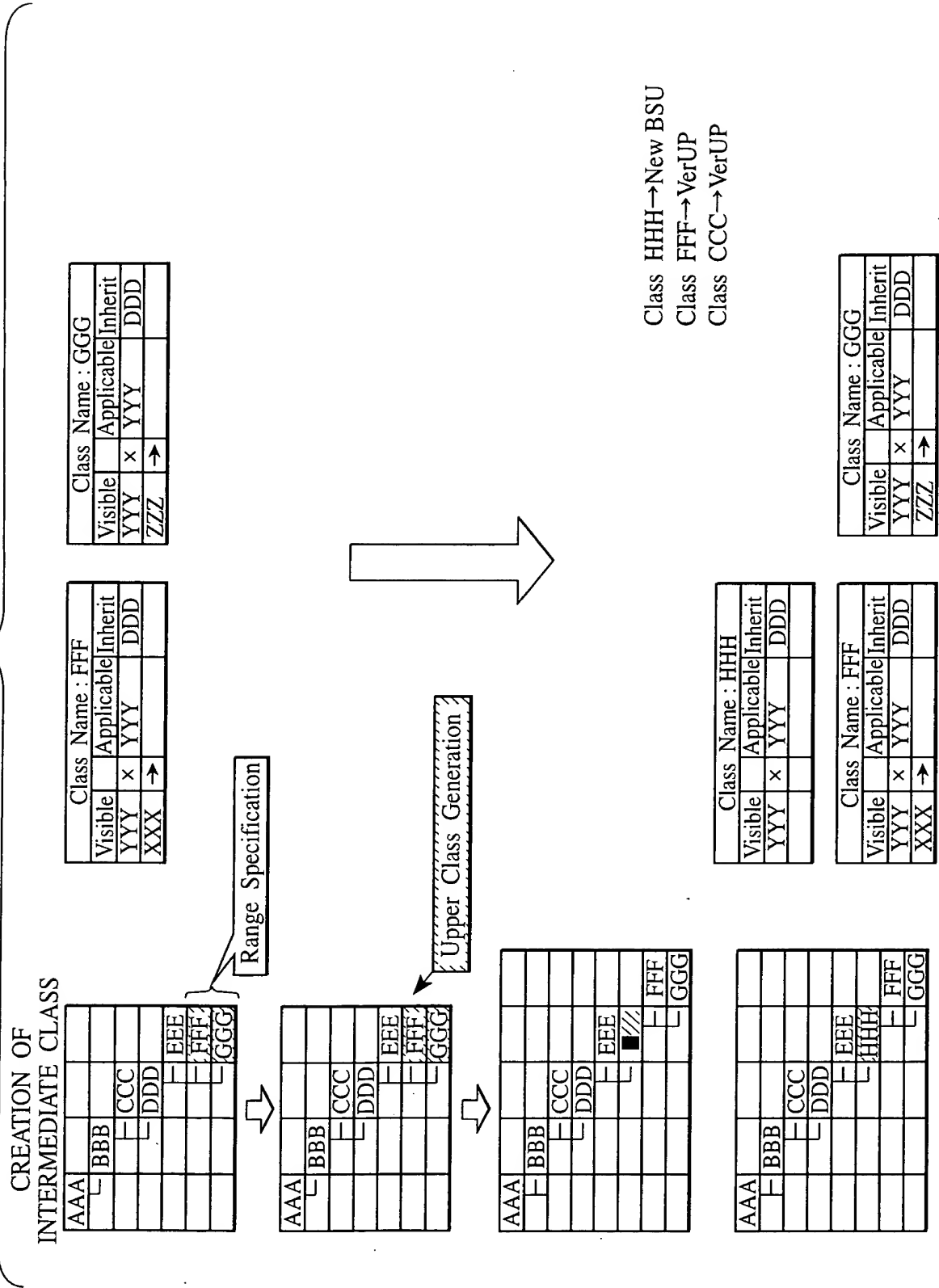
Class Name : DDD				
Visible		Applicable	Inherit	
SSS	x	SSS	BBB	
YYY		→	CCC	
ZZZ		→		

Class Name : HHH				
Visible		Applicable	Inherit	
SSS	x	SSS	BBB	
YYY		→	CCC	
ZZZ		→	DDD	
XXX		→		

Class DDD → VerUP
Class HHH → VerUP
Class III → VerUP

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FIG. 36 PRIOR ART



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FIG. 37
PRIOR ART

DELETION OF
INTERMEDIATE CLASS

AAA					
	BBB				
		CCC			
		DDD			
			EEE		
			HHH		
				FFF	
					GGG



AAA					
	BBB				
		CCC			
		DDD			
			EEE		
			HHH		
				FFF	
					GGG

Delete

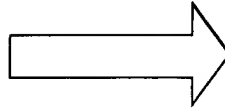


AAA					
	BBB				
		CCC			
		DDD			
			EEE		
			FFF		
				GGG	

Class Name : HHH				
Visible		Applicable	Inherit	
YYY	x	YYY	DDD	
SSS				

CLASS NAME : FFF				
Visible		Applicable	Inherit	
YYY	x	YYY	DDD	HHH
SSS				
XXX				

CLASS NAME : GGG				
Visible		Applicable	Inherit	
YYY	x	YYY	DDD	HHH
SSS				
ZZZ				



CLASS NAME : FFF				
Visible		Applicable	Inherit	
YYY	x	YYY	DDD	
SSS				
XXX				

CLASS NAME : GGG				
Visible		Applicable	Inherit	
YYY	x	YYY	DDD	
SSS				
ZZZ				

※SSS is overlapping → Assist Function